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ABSTRACT

This research paper discusses the messages and approaches being implemented in current television curricula for young children in the area of fire safety education, describes the process whereby the Children's Television Workshop (CTW) staff generated topics and approaches for inclusion in the model television curriculum, and lists the resources investigated by the staff. It discusses preschool children as television viewers and explains the consequent rationale used in adapting certain elements from current approaches, noting reasons why other elements are not feasible for television presentation to preschoolers. For those messages, topics, and approaches experimentally identified as part of the model curriculum, the study provides guidelines and cautions for television writers and producers, detailing specific segment ideas to illustrate those approaches which seem most feasible and interesting. (FM)

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FIRE EDUCATION FOR SESAME STREET:

A RESEARCH STUDY ON MASS MEDIA FIRE EDUCATION

FOR PRESCHOOL CHILDREN

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and

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THE CHILDREN'S TELEVISION WORKSHOP

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CONTENTS

INTRODUCTION 1

THE PRESCHOOL TELEVISION VIEWER 2

THE REVIEW OF FIRE SAFETY AND BURN PREVENTION MESSAGES 8

Messages Currently Being Employed By Educators 9

Experimental or Controversial Messages 13

Appropriate Television Messages for Preschoolers 17

The Model Curriculum 17

Writers' Notebook Messages 18

CONCLUSION 23

INTRODUCTION

In the context of exploring and developing new curriculum areas for Sesame Street's eleventh broadcast season, which begins in November 1979, the Children's Television Workshop's researchers have surveyed several topics under the general rubric of safety for preschoolers: traffic safety, poisoning prevention, and fire safety.

Initial explorations revealed that preschool children are at high risk from fires and burns. The younger spectrum of Sesame Street's target audience, the three- and four-year-olds, are frequently victims of contact burns from touching hot stoves or appliances and from scald burns from pulling pots of hot liquids off stoves. The five-year-olds frequently suffer from accidents related to fire, such as burns sustained during match play.

Because television is a medium widely used by preschoolers (the average two- to five-year-old watches 25 hours per week), and because Sesame Street in particular has been successful in teaching educational messages to preschoolers (Ball and Bogatz, 1970; Bogatz and Ball, 1971), the Children's Television Workshop decided systematically to explore ways of including important burn prevention/fire safety messages on television.

Beginning in February, 1979, the Workshop's research staff began a review of curricula, resources, and approaches currently in use by educators to teach burn prevention and fire safety messages to preschool and young elementary-age children. The intent was to use these messages as raw material -- as sources of information and inspiration -- for the development of a first-stage television fire safety curriculum

for preschoolers. The curriculum would be considered experimental in the same sense that all new curriculum items are experimental on Sesame Street; that is, the curriculum would need further investigation and possible revision if segments should actually be produced on the model. Any such segments would be tested with preschool children to ensure that they actually are age-appropriate and comprehensible, and the results of such testing would stand as the most accurate judge of the model curriculum's success or failure. In the curriculum development phase itself, however, the model fire safety/burn prevention messages have been identified with the Workshop's advantage of eleven years' experience in testing and developing educational materials for preschool children.

This paper lists the resources investigated, discusses the messages and approaches being implemented in current curricula for young children, and describes the process whereby the CTW staff generated topics and approaches for inclusion in the model television curriculum. The paper discusses preschool children as television viewers and explains the consequent rationale used in adapting certain elements from current approaches. Furthermore, it explains why others are not feasible for television presentation to preschoolers.

For those messages, topics, and approaches experimentally identified as part of the model curriculum, the paper provides guidelines and cautions for television writers and producers. It also describes specific segment ideas, as they might be utilized on Sesame Street, to illustrate those approaches which seem most feasible and interesting.

THE PRESCHOOL TELEVISION VIEWER

One feature of the Sesame Street model of curriculum development, a feature which has saved us much time and wasted effort in the past, is

to be as exact as possible in deciding what is to be taught, and in identifying who the audience is to be. It is helpful if decisions like these are made as early as possible in the development of a television curriculum. Consequently, the first step, and a very important and informative part of our work on fire safety and burn prevention was to review curricula, filmstrips, slide presentations, and television materials prepared by educators from many parts of the United States. As we talked with the educators and examined their materials, we were considering which kinds of messages and treatments might be most appropriate for television presentation to three- to five-year-old children.

Two overriding concerns presented themselves as the most frequent constraints on the kinds of messages and treatments which seemed workable. We found that we continually needed to bring these constraints back to the front of our minds, because a sincere interest in a subject as important as fire safety can easily push these and other precautions into the background. It is essential, however, for responsible broadcasters to become sensitive to the range of effects which their programming may have, and to try to design that programming in such a way as to maximize desired educational effects and to preclude possible unwanted effects.

The two limitations which we had to work with, and which continually guided our choices and adaptations of fire safety/burn prevention messages, are the nature and capabilities of the three- to five-year-olds who comprise the Sesame Street audience, and the limitations of the television medium itself.

It is patently obvious that the vocabulary and range of experience of a preschool child are quite limited. But it is more difficult to remember this fact than one might suppose. Especially when there is

something important to say, we are liable to let our enthusiasm for the message itself overwhelm our understanding of the child we are trying to teach. It is important to double-check the words and content of a message with an eye to whether they are all age-appropriate. For example, it may be necessary to find ways of making a concept like fire understandable to a three-year-old who is just beginning to learn about hot. We cannot assume that a child's experience is the same as an adult's. Furthermore, words and phrases like "scald," "avoid," "prevention," "electric appliance," "boiling" are commonly used in discussions of fire safety and burn prevention, but they are liable to be beyond the scope of most preschoolers.

In a similar vein, it is necessary to design television presentations so that the meaning of the message is crystal clear. Children are not skillful at interpreting subtleties, at drawing conclusions which are not explicitly stated, or at imputing motives or emotions. If a message assumes the child's ability to perform these operations, it may be totally overlooked or misinterpreted. Without condescension, television presentations must be direct and clear. Labelling, explicit verbal and visual delineation of the message, and elimination of excess verbal and visual clutter are helpful in attaining this objective.

To further complicate matters, three- to five-year-old children also have an unclear and undeveloped sense of time. They may have difficulty understanding the relationship of one event to another. They have problems understanding temporal sequences of events, especially loosely or abstractly connected ones, and they have problems understanding cause and effect. Therefore, broadcasters must take special care in presenting messages which are dependent upon those skills. For

example, showing the disastrous consequences of playing with matches may only succeed in leading children to focus on the visually attractive match play -- there is no guarantee that they will make the connection between match play and any dire consequences which are portrayed.

Preschoolers are not skilled at holding one or more options or solutions in their minds, while they weigh factors and choose a best response. Consequently, programming formats which require them to choose among alternative courses of action may not be feasible. For example, it may be difficult to teach in a televised presentation that children should consider alternative escape routes in case of fire. A preschool child is more liable to seize upon the portrayal of one escape route as the only "right" answer -- perhaps with disastrous consequences. Similarly, it is hard for a young child to understand a command like, "Touch the door. If it is hot, do not open it. Find another way to get out." In general, statements that read in the form, "If _____, then _____" require more complex evaluative skills than many preschoolers can handle.

Another point for programmers to keep in mind is that preschoolers are notorious for being imitators. They learn by copying at this age, and their judgment is not nearly so sophisticated as their copying skills. Consequently, children may copy actions which we would rather they did not emulate. In fact, they may copy the very actions which we present along with a carefully worded message such as "Don't do this!" We describe this problem with the phrase "negative modelling," and it is a particularly important pitfall to avoid in programming for youngsters. Negative modelling is the reason why showing match play on television may be counterproductive. Three- to five-year-olds are quite liable to want to copy that attractive activity, and to ignore or even

fail auditorily to process the accompanying message which explains how dangerous playing with matches can be.

Tendency to indiscriminately model what they see; imperfect understanding of time and sequence; difficulty with considering and comparing more than one alternative at the same time; and lack of experience and vocabulary -- these factors all lead up to the fact that preschoolers frequently process what they view on television in eccentric and thus unpredictable ways.

They may, for example, attend selectively to one small portion of the programming and ignore the remainder. They may watch the visual and ignore the verbal channel, or vice versa. An attractive animal presented in a scene may so distract a child that he fails to attend to the rest of the segment. Children may also fail to link the beginning of a story with its end. They may fail to connect a conflict with its resolution, or a problem with its portrayed solution. They may fail to understand media conventions which adults take for granted, like ripple effects, cuts from one character to another, or music which cues danger or emotional states of characters.

Constraints like these loom very large when a broadcaster is dealing with a topic like fire safety, where children might interpret a message in a dangerously incorrect way: for example, copying match play, noticing the attractiveness of an electric cord which they might have otherwise overlooked, or trying to escape a fire by exiting from a window -- in a tenth-floor apartment building.

Broadcasters should err on the side of overcaution rather than taking a chance at being to reckless and daring with their experiments. They should always bear in mind that the television medium has a limitation which makes this caution absolutely indispensible. We must always assume that television messages will be seen by a child viewing alone.

If a child misunderstands a message, there may be no occasion to rectify the mistake. We cannot count on a parent, teacher, or older sibling to explain or reinforce the message, or to make sure that the child's attention is directed to the salient portions of the programming, much as we might hope for such intervention. It is altogether possible that teachers working in classrooms or parents teaching their own children may be able to accomplish more ambitious objectives in the area of fire safety and burn prevention than television should try for. These styles of teaching might require an altogether different set of guidelines and curriculum messages than those appropriate for television. The real point in this context is that a multifaceted teaching approach might be most effective. Television cannot accomplish everything, but it might offer some very helpful impetus. Home teaching and in-school programs are also important, but can require some bolstering from the media. Each kind of approach doubtless has its strengths and limitations and should be designed to take advantage of those strengths.

The guidelines we were experimenting with are conservative because they must take into account not only the capabilities of preschool children, but also the one-way nature of the television medium. The messages and guidelines are consequently neither complete nor exhaustive in the context of a fire safety/burn prevention curriculum. Rather they are a proposed plan for teaching about these subjects to a particular audience via a particular medium. Educators who choose to reach other audiences or use alternative media might still find the guidelines and messages useful. Some of them may turn out to be applicable, and furthermore, it might be useful to examine the processes which went into formulating them. This paper documents the process so that other educators and users of media can employ it to create their own curricula and guidelines.

Above all, it is necessary for readers to remember that at this stage of formulation the curriculum messages and production guidelines are in the experimental stage and are based on our years of experience and research in how preschoolers watch and understand television. The next step for a broadcaster would be to create experimental segments which teach the messages in accordance with the guidelines. Then the experimental segments would be tested for appropriateness with child viewers, to see if the children attend to and comprehend the segments. One feature of the Sesame Street model for creating curriculum is that all of the products of our work -- curriculum messages, production guidelines, and the televised segments themselves -- are experimental and are subject to revision whenever field testing indicates that there is a better way of achieving the objective.

THE REVIEW OF FIRE SAFETY AND BURN PREVENTION MESSAGES

Through an extensive exploration of fire safety and burn prevention issues and curricula, we have identified numerous messages which are currently being taught to young children. Although it is by no means exhaustive, the following summary provides a brief overview which we feel is representative of our review. Organized by topic, the messages are not necessarily designed only for children; some of them provide additional information for parents or other caretakers.

After we have reviewed the range of messages being employed by educators, a later section of this paper will describe which of these and other topics have been selected by us as especially appropriate for television presentation to preschoolers.

A list of educators contacted and resources is included as an appendix to this report.

Messages Currently Being Employed By Educators

Understanding Fire

- Fire is hot
- A "good" fire cooks food, warms homes, etc.
- A "bad" fire burns people and things; it hurts people

What To Do in Case of Fire

- Smoke rises: crawl under smoke and keep your head low
- Get out fast and carefully
- Do not try to hide from the fire (e.g., in the closet or under the bed)
- Do not go back into a burning building for any reason
- Feel the door to see if it is hot; if it is not, go out the door. If it is hot, go to the window and call for help
- Go to the meeting place and have a "head count" at a safe distance from the fire

Evacuation Planning

- Plan escape routes and alternative routes
- Practice escape routes regularly
- Arrange a meeting place to have a "head count" at a safe distance from the fire
- Make escape ladders

Fire and Smoke Detectors

- Detectors warn people of fires
- Tell your parents about detectors
- It is important to install a detector in your home

Matches

- A match is a tool
- Matches should be used correctly

Matches (Continued)

- Matches are for adults -- bring matches to an adult if you find them
- Do not play with matches

Clothing Fires

- If your clothing catches on fire, do not run
- Stop, drop, and roll
- Drop, roll, and cool

Reporting a Fire

- If you see a fire, tell an adult
- Call the fire department
- Dial "O" and give your name and address

The Firefighter and Firefighting

- The firefighter teaches about fire prevention
- The firefighter helps people by putting out fires and rescuing people from fires
- The firefighter uses special clothing, fire engines, and many special tools in firefighting

Scalds and Contact Burns

- Some objects do not look hot but can burn you
- Hot things can burn and hurt
- Put cool water on a burn

Parenting information included:

- Turn pot handles away from the edges of stoves
- Keep hot liquids away from the edge of the table or counter
- Check water temperature in faucets and tubs
- Keep appliance cords out of reach of young children

Fire Hazard Identification

This area teaches children and parents to identify fire hazards, for example:

- Flammable liquids
- Frayed cords
- Open flames and heaters
- Flammable clothing

The topics above have been presented to children in a wide variety of formats. A number of them involved a fire educator or firefighter working directly with children through media like puppet role plays, storyboards, finger plays, poems, games, and other activities. These activities characteristically take place in visits to day care centers, kindergartens, schools, or the fire station. All of the formats in use featured the presentation of fire safety messages and lessons in the context of review, practice, and discussion.

Numerous print materials were also reviewed by our staff. These included pamphlets, teacher and caretaker guides, calendars, coloring books, books, and posters. Clearly, such materials required and encouraged adult participation in the lessons and very often provided information especially for caretakers. Numerous filmed presentations were also reviewed. These included slides, movies, and filmstrips. Slides were typically used by the adult presenter to reinforce, review, or otherwise accompany a fire safety lesson. Filmstrips and movies served a similar purpose and sometimes required the viewer to be able to read the lesson. Very often, filmstrips and movies covered a great deal of factual information in the lesson and were designed for elementary school viewing across several grade levels. Because the film presentations often used print, covered a great deal of material, or were intended as a

portion of a lesson, the adult presenter was very important in helping the child to understand and assimilate the information.

The public service announcements we reviewed were typically described as for "the general audience." Although they were excellent examples of television media, their principal intended audience was children older than the three- to five-year-old audience of Sesame Street, and adults.

Because so many of the materials and curricula required adult intervention or were not really on-target for our age group, a great deal of thought and sifting had to be applied before appropriate messages were chosen or adapted for television. Some of the topics currently being used were identified as ones that should be approached cautiously, if at all for presentation on television to preschoolers. Parents and teachers, as well as educators or broadcasters responsible for children from older age ranges, may have more latitude in employing messages and treatments.

Some of the messages were carefully considered and were deemed experimental. We felt that they might be cautiously tried on television, given certain constraints. We felt that we would prefer not to attempt others at all, given the nature of our audience and our medium. Still other topics and messages lent themselves most readily to television treatment with young children. These were messages which could easily be expressed in simple terms and which worked well on television. They were also the messages which we felt were least liable to transmit unintended negative effects. For these most feasible approaches, we developed segment ideas for incorporating them into Sesame Street curricula and formats.

Experimental or Controversial Messages

Matches

Identifying appropriate messages about matches can be a difficult job for television, because we do not want to show children playing with matches, even in the context of clear instructions that this is not a good thing to do. As we explained earlier in this paper, preschoolers are liable to fail to connect verbal "no" instructions or an unpleasant consequence with an attractive visual input like a burning match or flame. Chances are we would be unwilling under any circumstances to show anyone striking a match on television, for precisely these reasons. For the same reason, it is difficult to think of a workable way to present the message, "matches are tools," with instruction on how to use them properly.

We have not satisfactorily settled the issue whether showing unlit matches on television might be a useful thing to do. Some of us felt that we might experiment with approaches that teach the concept, "matches are only for adults to use." Examples of this approach are a segment where the camera zooms in on an (unopened) book of matches. Then we hear a child's voiceover saying, "No -- I must not touch them. They are not for children." An alternative approach to the same kind of message is to show a puppet finding a book of matches somewhere on the street. He takes them directly to an adult, explaining to the viewing children or perhaps to another character that when you find matches, you must immediately bring them to a grownup.

This message has the advantage that it does not portray the negative model of a child striking matches; nor does it bring the child's attention to the visually attractive flame. Rather, it focuses on the positive idea, "give them to a grownup." Yet we are still unsure whether

focusing on matches in any manner might not serve to draw the attention of viewers to a dangerous object which otherwise might not have interested them at all. Some staff members were of the opinion that since match play is primarily a problem with our older target-age children, who are already aware of the existence and function of matches, we would not be putting ideas into children's heads by focusing briefly on matches if they remain unlit. Other staff members felt that concentrating on any object is bound to increase the attention to and fascination for that object. As the issue is still unresolved in our minds, this topic is probably one that we would not treat at present, at least until we have more concrete knowledge about how children learn from and react to less controversial fire safety/burn prevention messages on television.

Evacuation from a Burning Building

We also discovered some difficulties in trying to teach children what to do if caught in a burning building. For example, many of our consultants advised us that children alone in burning rooms frequently try to hide from the flames under beds or in closets. We did not feel that television could present a "don't hide in the closet" message without modeling precisely the activity we want children to avoid, or at the very least, suggesting a dangerous possibility to them which might not otherwise have occurred to them.

Getting out of a burning building is also difficult, because there is no unqualified message to present. We felt we might possibly present characters discussing the need to plan escape routes in case of fire. We felt that bringing up the issue might induce preschoolers to persuade their own parents to plan escape routes and fire drills. The focus of such a message should clearly be that each family needs to make

its own plan in case of fire.

Presenting the issue purely as a discussion is problematic, for talky discussions do not make good television, nor are they particularly successful in holding children's attention. However, it may be important for us to avoid actually demonstrating any particular escape route for fear that in an emergency, children might remember it as the "right" answer. It would be very dangerous, for example, for preschoolers to assume that it is always correct to exit from a window or go out the door.

We have already discussed the fact that evaluative processes, like feeling the door to find out if it is hot before opening it, may be too difficult for little children. Sequences of events are difficult for children to understand, and evaluations about what "hot" means are difficult for many of them to make.

Even presenting a simple rule like "Get out!", which may seem self-evident, is not as uncomplicated a matter as it seems. In actuality, getting out is almost certainly going to involve several steps, each contingent on making one or more decisions.

Reporting Fires

Some advisors felt that children should be taught to report a fire to the fire department. We wondered whether teaching a rule like this on television might not assume that preschoolers have the judgment to decide whether a given fire is dangerous or benign. Is smoke from a window the result of cooking or a fire raging within? Consequently we felt that perhaps we might encourage children to report signs of a fire to the nearest adult, rather than risking false alarms to the fire department.

Most Sesame Street-age children are unable to operate telephones successfully and are too short to use fireboxes. Furthermore, we were afraid that showing a young child activating a fire box, along with the resulting exciting arrival of the firetruck, might be inviting false alarms, a grave fire safety danger in itself. We were also reluctant to ask children to telephone for fear that they might delay leaving a burning building while they struggle with a telephone call.

Clothing Fires

Many fire educators teach children the "stop, drop, and roll" or "drop, roll, and cool" techniques for combatting clothing fires. Some have reported a considerable degree of success with games and activities designed to teach these techniques. Typically, however, children practice dropping and rolling in the context of an entire lesson on fire, and the technique itself gets much reinforcement and actual practice. This kind of message may be teachable via television, but more testing and experimentation are necessary to determine whether preschoolers can transform a game that they watch on television to a skill applied in a real-life emergency.

Crawling Under Smoke

A similar difficulty arises with games meant to teach children that they should crawl underneath smoke to find breathable air. Again we need to investigate whether preschoolers can transfer the viewing of games in which grey crepe paper or low chairs represent smoke to the real-life situation which arises in an emergency.

Appropriate Television Messages for Preschoolers

This section of the paper describes the subset of topics and messages which we feel lend themselves most readily to television treatment for young children.

Along with the topic suggestions, we have included a compendium of caveats, precautions, and Sesame Street segment ideas which at the Children's Television Workshop are presented in a resource book called the Writers' Notebook. The Writers' Notebook is used by producers and writers to learn additional information about curriculum goals, to check precautions and guidelines for segment production, and to stimulate creative thinking about a specific objective. Ideas in the Writers' Notebook are not necessarily meant to be adopted and developed into full-fledged segments, but are meant to get writers started on the process of thinking about the range of possibilities inherent in any goal. We hope that the Writers' Notebook materials presented here will be useful thought-provokers for writers and producers of other children's television programming as well.

The Model Curriculum

Understanding Fire

Fire has the following general characteristics.

- Fire is hot
- Fire can be used to cook food, heat homes, and provide light
- Fire can burn people and things

Fire and Smoke Detectors

- Children can be taught about the form (appearance, shape, size, and sound) of smoke detectors
- Children can be taught about the function of smoke detectors

Fire Fighters

- The firefighter is an important person in the neighborhood who plays a role in educating neighbors about fire
- The firefighter fights fires and rescues people from fires
- The fire station is an important place in the town or city
- A firefighter wears special protective clothing and uses many unusual tools (we want to avoid the possibility that a firefighter may frighten a child who requires rescue)

Scalds and Contact Burns

- Hot things can burn and hurt
- Children should not touch hot objects or appliances

Writers' Notebook Messages

Understanding Fire

Sesame Street frequently teaches children to recognize or identify characteristics of the natural environment. It is conceivable that simple messages about fire might also be treated in similar ways.

For example, in demonstrating the usefulness of fire as a natural resource, a live-action film might portray a parent using a barbecue grill to cook burgers on a family outing, a campfire with people toasting marshmallows, a candle providing light on a stormy night, and a fireplace with skiers warming themselves. A voiceover could identify each of these scenes to viewers as examples of how we use fire. In this way, the direct pairing of each visual example and the voiceover explanation would clarify the fire message.

In street scenes, Big Bird might discover the things that fire is used for on Sesame Street. For example, he would learn that fire cooks food at Mr. Hooper's store, helps to heat the day care center, warms Bert's oatmeal, and lights the candles on his birthday cake. Gordon's

science class might also provide us with an effective format for teaching about the powers of fire.

In all of these portrayals we must be careful to avoid the presentation of unintended messages and be certain to model only safe practices. For example, children should never be close to any fire or heating device. We would never show the process of starting fires, as we would not want to portray this as an attractive activity, which children might then try for themselves at home.

In creating segments about the characteristics of fire, great care must also be exercised in demonstrating the harmful powers of fire. We would not show clothing, people, or animals getting burned. Throughout our work on fire safety, we have considered at some length the possibility of showing children that fires can burn people and animals. After much thought, we had to decide to avoid this message, since there is a strong possibility that such a presentation might be too fear-arousing to young children. A young viewer might be viewing alone with no one to help him assimilate the message and allay any fears, and this would constitute too great a danger to risk.

We can teach that fire has the power to burn things by using live action film. In films of this kind we can show a forest burning and explain in a voiceover that fire burns and destroys nice things.

Hot and cold are sight words which are taught on Sesame Street as part of our prereading curriculum. We could use these sight words to teach the message "fire is hot." For example, Big Bird might try to read the word "hot." Bob might try to assist him by explaining that the word is "hot," and that fire is an example of something that is hot. The use of production techniques like close-ups on the printed word "hot"

and repetition of the word itself will help to clarify the message.

Fire and Smoke Detectors

In a curriculum area called "The Man-Made Environment," Sesame Street has long taught about the general form and function of machines and tools. In this same context, we can present information about fire and smoke detectors.

Segments might teach that smoke and fire detectors are important man-made devices which warn people about fires. These segments could portray cast members learning about and installing detectors on Sesame Street and discussing their importance in warning people about fires. For example, in a street scene, Big Bird might discover Luis and Maria in the Fixit Shop, excitedly opening a box. When Big Bird asks why they are excited, they explain that a smoke detector has just arrived for Bob, and they will be going to his apartment soon to install it. Big Bird asks what a smoke detector is, providing a format for Maria and Luis to teach about its form and function. Big Bird, after learning this information, could rush off to tell his bird friends of the importance of installing smoke detectors in their nests, thereby modelling this behavior for children in the audience.

Live-action film could be used to show families installing smoke detectors in their homes. A child's voiceover might explain what is happening in the film and why the family decided that it was important to install a detector. Animation does not seem a viable technique for conveying information about detectors. It seems more important to show children that they are real devices which could be installed in their homes, too.

In general, it does seem that we can portray learning about smoke detectors, telling others about the importance of detectors, and installing

detectors. However, we would not portray an actual fire in the home or on the street, because, once again, such portrayals may very well be fear-arousing. We would also not show someone setting a fire or lighting a match to demonstrate the capabilities of a detector in responding to smoke or flame. We would be willing to demonstrate the sound of a detector with the explanation that the sounds of different detectors may vary, but that they serve the purpose of warning people with their sounds.

Firefighters and Firefighting

Sesame Street teaches about the characteristics of different neighborhoods, and in this context Big Bird might be out for a stroll and decide that he is thirsty. He walks up to the fire station to get a drink of water. During his visit, he learns about the functions of a fire station and what it looks like. This plot would be especially well-suited to a location shooting in which Big Bird visits an actual fire station, and real engines, poles, and fire-fighting equipment can be shown.

Sesame Street frequently teaches about careers and occupations. Information can be conveyed about the occupation of a firefighter. A segment might be designed in which Big Bird meets a firefighter, befriends the person, and learns all about firefighting. He might then wear his own fire helmet and teach Mr. Snuffleupagus about being a fire-fighter. In another segment, a firefighter might visit the day care center on Sesame Street and teach the children about his or her job. Our new little girl muppet, Georgie, might then decide that being a firefighter would be fun (even Oscar might enjoy learning about the Grouch Fire Department).

When we teach about firefighting, we should try to present the

firefighter in a lifelike role, showing the viewers the kind of clothing and tools a firefighter actually uses.

Scalds and Contact Burns

The message that hot things can hurt and burn can be incorporated into segments which focus on the concepts hot and cold. Sesame Street already presents hot and cold both as relational concepts and as sight words. Burn prevention information can be added to either of these two kinds of treatments.

For example, the Sesame Street Sorting Song might be used as a format for teaching children to make a distinction between hot and cold. Bob could use a sorting board with pictures of three hot objects (e.g., a fireplace, a candle, and a steaming pan of water) and one cold object (e.g., an ice cream cone). When the song is finished and he asks which object does not belong with the others, he can explain that the ice cream cone does not belong because it is cold and all the other objects are hot. He can then explain that all of the hot things can burn.

Because bathtub burns and water scalds are major causes of burns, we might try to teach the sight words hot and cold as presented on water faucets, paired with the information that hot can burn. However, we would not show a child using the faucets by himself or herself alone, as a viewer at home might then imitate this action and get burned. What we can do is teach the printed words and focus on the fact that hot can burn and can hurt.

We can teach children to make a distinction between hot and cold things in a live-action film of objects in which a voiceover labels each example as hot or cold. A child's voiceover might also say, "Don't touch" as each hot object appears. Things like a steaming kettle, a

steaming tub, and an iron would be labelled "hot." A snowball, an ice cream cone, and a refrigerator would be labelled "cold." Animations might be very successful in providing humorous examples of hot and cold. For example, animated characters might shiver and perspire in funny situations. Kermit the Frog might retell the Goldilocks tale, focusing on the hot and cold porridge with the message to Goldilocks that the hot porridge can burn her tongue. The Count might delight in counting hot or cold things on the street.

Some information especially for parents who might be viewing with their children can be included as incidental messages in the context of segments about other subjects. For example, Mr. Hooper might turn pot handles away from the edge of his stove, explaining to Buffy that he would not want three-year-old Cody or anyone else to get burned by bumping into them and spilling something hot.

We would not show a character getting burned on something hot.

CONCLUSION

We began our review of fire safety and burn prevention curricula hopefully but a little tentatively, knowing how difficult it is to tailor safety messages for young children. After six months of exploration, our reluctant conclusion is that there are a number of highly limiting and fundamentally insurmountable limits on the capabilities of television for imparting to preschoolers precisely the messages they most need to know and understand about fire safety. Unavoidably, preschoolers are largely dependent on others for prevention and protection against fire and burns.

However, we do feel that we have uncovered some positive suggestions about teaching fire and burn prevention messages on television. These

messages represent a first, careful, and responsible step, if they are taught with a clear awareness of the nature of both young children and the television medium.

APPENDIX OF RESOURCES

This appendix represents a listing of fire safety and burn prevention educators who assisted us in this endeavor. Many of the materials we learned about and examined are also included.

Contact	Resource for
Daly, Trudy	Fire Safety Education Director The Hartford Insurance Company Hartford, Conn. "Junior Fire Marshal" Program including calendars and teacher guides.
Hansen, Donald	"Smokey Bear" Program Manager U. S. Department of Agriculture Forest Service, Washington, D.C.
Jackson, Inspector Lonnie	Public Education Officer Mt. Prospect Fire Department Mt. Prospect, Illinois
Jameson, Fred	Public Information Officer Las Vegas Fire Department Las Vegas, Nevada Films: "Harv and Marv" "Fireman, Fireman" "Matches"
McGuire, Andrew	Executive Director Northern California Burn Council Trauma Center San Francisco, Calif.
McLoughlin, Liz and Halpern, Judith	Director of Burns Prevention Education Shriners Burns Institute Boston, Mass. Materials from Project Burn Prevention involving Mass. General Hospital U.S. Consumer Product Safety Commission Shriners Commission Educational Development Center NFPA including teacher guides, filmstrips and public service announcements.
Trench, Nancy Dennis	Fire Education Specialist Fire Service Training Oklahoma State University Stillwater, Oklahoma Slides "Matches Aren't for Children" "The Story of the Little Red Fire Hat"

Lohr, Cathy	Fire Education Specialist North Carolina Department of Insurance Raleigh, N.C. Filmstrips: "The Fable of Freddie Fire" "The Story of Firefighting in America" "A Lucky Day"
Schnitzer, Jr., George	Director of Public Information & Education Tennessee State Fire Marshal's Office "Professor Pyro" public service announcement
Covey, Elien J.	Fire Safety Education Specialist Garden Grove Fire Department Garden Grove, California "Sound/Slide show script "Fire Safety is Fun"
Wright, Rosiland and Woo, Sharon	Associate Director Northern California Burn Council San Francisco, California Preschool Program Action Against Burns Teaching guide lessons
Maletsky, Edith	Education Coordinator Burn Foundation of Greater Delaware Valley Philadelphia, Pennsylvania "Bananas" program used in California
Condon, Polly	Division of Community Services Georgia Department of Human Resource Madison, Georgia "Fire Safety Education Programs for Preschool Children"
Lanier, George	Rome Fire Prevention Bureau Rome, Georgia, Fire Department with Polly Condon "Basic Fire Safety Education Training for Adults Working with Preschool Children"
Robison, Capt. Isaac	Public Education Officer Springfield, Illinois
Michaelis, Lynne	Fire Prevention Specialist Fountain Valley Fire Department Fountain Valley, California Muppet script and tape
Maley, Matthew	Director of Environmental Control Shriners Burns Institute Cincinnati, Ohio "Exit Drills in the Home" slides and information

Young, Clair	Safety Education Cooperative Extension Service Columbus, Ohio Filmstrip: "Be Safe with Fire" with "Frankie Fire Hydrant"
Chlad, Dorothy	President and Founder "Safety Town" Cleveland, Ohio

Other Resoureces

Films: "Snuffy the Talking Fire Engine"
"Fire and the Witch"
"Smush the Fire Out"
"Donald's Home Survival Plan"
"I'm No Fool with Fire"

"One More Fire Danger" Story NFPA
by Charlotte Kahn

"Basic Fire Survival Education Program"
City of Syracuse Department of Fire & City School District
by R. Chawick, M. Perry, J. Runyan

"Captain No Burn" Coloring Book
West Bank & Trust Company

"A Study of Motivational Psychology related to
Fire Preventive Behavior in Children and Adults"
NFPA

"You're Big Enough for Fire Safety"
Burger King Educational Unit
includes "Play it Safe with Snuffy"

NFPA Dick Van Dyke spots e.g.; STOP, DROP & ROLL

NFPA "America Burning" pamphlet and Executive Summary of "Fires in the U.S."

Information re: Children's Museum of Boston

Ban the Burn! APBIC Handbook of Fire & Burn Safety by
Action for the Prevention of Burn Injuries to Children, Inc.

"Fire Education and the Media" Conference
Chicago, Illinois
June, 1979

"Fire Survival Skill: Who Plays with Matches?"
Ditsa Kafry

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